

REMARKS

Claims 1-13 are pending in this application. By this Amendment, claims 1 and 7 are amended, claims 7 and 8 are withdrawn, and claim 13 is added. No new matter is added by this Amendment. Support for the Amendment can be found in at least Applicant's original specification, page 9, line 17 - page 10, line 9, for example. Reconsideration of the application in view of the above amendments and the following remarks is respectfully requested.

Applicant appreciates the courtesy shown to Applicant's representative by Examiner Rhee in the April 12, 2011 telephone interview. Applicant's separate record of the substance of the interview is incorporated into the following remarks.

I. The Claims Define Patentable Subject Matter

The Office Action repeats the previous rejections of claims 1-6 and 9-12 made in the September 17, 2010 Office Action. Specifically, the Office Action rejects claims 1-6 and 9-12 under 35 U.S.C. §102(b) as allegedly being anticipated by JP 2003-346845 to Ushio et al. (hereinafter "Ushio"); and claims 1-6 and 9-12 under 35 U.S.C. §103(a) as allegedly being unpatentable over Ushio. The rejections are respectfully traversed.

Specifically, the Office Action alleges that the features of Applicant's independent claim 1 not disclosed in Ushio are not given patentable weight because such features are allegedly intended use of the device.

As agreed during the April 12, 2011 telephone interview, claim 1 is amended such that the features of claim 1 are given patentable weight. For example, Ushio fails at least to disclose the structural feature of a control unit that stores a correlation between the temperature and the electric conductivity of the coolant, the control unit being configured to estimate an electric conductivity at the target set temperature based on the electric conductivity of the coolant, the temperature of the coolant, and the correlation between the

temperature and the electric conductivity of the coolant, and the control unit being configured such that based on a correlation between a parameter related to the temperature of the coolant and the electric conductivity of the coolant, when the electric conductivity at the target set temperature exceeds a target electric conductivity range, that control unit controls the parameter related to the temperature of the coolant so as to maintain the electric conductivity at the target set temperature within the target electric conductivity range.

Ushio fails to disclose the above features of independent claim 1 and also fails to disclose similar features of independent claim 13. Instead, as discussed in the November 15, 2010 Amendment, Ushio merely discloses using temperature to determine the temperature compensation multiplier prior to computing the activity ratio of the exchange resin (see Ushio's paragraph [0053]). Further, any temperature allegedly used in Ushio is a measured temperature measured at start-up and at a later predetermined time, and thus is not a target set temperature where a control unit controls a parameter related to a temperature of the coolant so as to maintain electric conductivity at the target set temperature within the target electric conductivity range, as recited in claim 1 and similarly recited in claim 13.

Further, Ushio is silent regarding a control unit being configured to estimate electric conductivity at the target set temperature based on the electric conductivity of the coolant, the temperature of the coolant, and a correlation between the temperature and the conductivity of the coolant, as recited by independent claim 1 and similarly recited by independent claim 13. Instead, Ushio discloses flowing cooling water for a predetermined amount of time whereby an average stream flow of the cooling water is calculated. A rate of decrease of the electrical conductivity in the predetermined time is determined and the activity ratio of the ion exchange resin is computed by applying the rate of decrease of the electrical conductivity for the average flow stream of the cooling water. The computed ratio is compared to a predetermined value. If the activity ratio of the ion exchange resin is lower than a

predetermined value, the flow control valve 11 is operated for by-pass flow, and when the activity ratio is greater than a predetermined value, the flow control valve 11 is operated to increase the flow to the ion exchange machine 4 (see Ushio's paragraphs [0054] - [0057] and paragraph [0077]). Accordingly, Ushio's control is based on the flow rate of the cooling water to the ion-exchanger 4.

In contrast, Applicant's specification discloses that a control unit configured to estimate the electric conductivity at the target set temperature provides the advantage that the electric conductivity at the target set temperature can be controlled so as to be held within the appropriate range (see Applicant's original specification, page 6, lines 7-14). Specifically, Applicant found that there was a correlation between electric conductivity of a liquid coolant and temperature of the liquid coolant such that the electric conductivity of the coolant can be adjusted to and maintained within the target electric conductivity range if a parameter related to the coolant temperature is controlled based on the correlation of the temperature and the electric conductivity of the coolant (see Applicant's original specification, page 2, line 21 - page 3, line 2). Accordingly, Applicant's claim 1 recites that the control unit is configured such that it controls the parameter related to the temperature of the coolant so as to maintain the electric conductivity at the target set temperature within the target electric conductivity range. This feature provides the advantage that electric conductivity of a liquid coolant can be maintained even if the temperature of the liquid coolant changes following the change in the operation state of the fuel cell (see Applicant's original specification, page 2, lines 11-14).

In addition, the dependent claims are allowable at least for their dependence on allowable claim 1, as well as for the additional features they recite.

Accordingly, Applicant respectfully requests withdrawal of the rejections.

II. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of the claims are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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Attachment:

Request for Continued Examination

Date: April 27, 2011

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